

STUDIES IN LEGUMINOSAE: 2. THE GENUS *PONGAMIA* VENT. IN INDIA

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ABSTRACT

The genus *Pongamia* Vent. is represented in India by one species, namely *Pongamia pinnata* Pierre. Full synonymy, description, distribution and notes of interest on ecology, economic and medicinal aspects of this taxon are discussed.

INTRODUCTION

The genus *Pongamia* was established by Ventenat E.P. in 1803 (Jard. Malm. t. 28). Several species have since been described but all of them belonged to either *Derris* Lour. or *Millettia* Wt. & Arn. and consequently were transferred under the above two genera. The genus at present consist of 2-4 species, distributed in tropical Asia and Australia.

The history of the genus shows that there has been considerable diversity of opinion in the past as to the correct name which should be borne by this genus. Adanson (Fam. 2: 322. 1763) proposed the name '*Pongam*' which has been derived from Tamil for this species. Lamark (Encycl. 2: 594. 1786) gave the name *Galedupa* for this genus which has been followed by Roxburgh (Hort. Beng. 53. 1814; Fl. Ind. 3: 239. 1832) as well as Taubert (Engl. & Prantl. Nat. Pfl. fam 3(2): 344. 1891). This name *Galedupa* cannot be applied to this genus for reasons (Prain in J. Asiat. Soc. Beng. 66: 94 & 456. 1897) stated below: 1. The more familiar name *Pongam* long antedates this name. 2. *Galedupa* Lamk. was based on the identification of *Gaju-Galedupa* Rumphius (Herb. Amboin. 2. t. 13. 1741) with *Pongamia glabra* Vent. Further, *Gaju-Galedupa* which is a *Sindora*, is figured as having equally pinnate leaves, dehiscent pod, and arillate funiculus whereas in *Pongamia glabra* Vent. the leaves are unequally pinnate, pod being indehiscent, and the seeds not arillate but with a small hilum. Moreover, Rumphius knew and figured *Pongamia glabra* Vent. itself (Herb. Amboin. 3. t. 117. 1743) under its Malay name '*Malapari*'. These being the facts, Lamark detected his mistake and changed his *Galedupa* again to *Pungamia* (Lamk. Tabl. Encycl. t. 603. 1796-97). *Pungamia* has later been corrected by Ventenat to *Pongamia* (Jard. Malm. t. 28. 1803) which name has now been conserved. (Int. Code bot. Nom. sub no. 3836. 1954; Taxon 8: 295. 1959).

Pongamia Vent. Jard. Malm. t. 28. 1803, nom. cons.; DC. Prodr. 2: 416. 1825; Wall. Pl. Asiat. Rar. 3: 20, t. 232. 1832; Wight in Hook. Bot. Misc. 3: 301. 1833; Wight & Arnott, Prodr. Fl. Pen. Ind. Or. 262. 1834; Wight, Ic. t. 41, 59, 328, 420. 1838-41; Span. in Linnaea 15: 197. 1841; Voigt, Hort. Subur. Calcutt. 239. 1845; Zoll. & Mor. in Syst. Verzeichn. 2-3. 1845-

46; Dalz. in Hook. Kew J. Bot. 2: 37. 1850; Benth. in J. Linn. Soc. 4 (Suppl.): 115. 1860; Dalz. & Gibs. Bombay Fl. 77. 1861; Thw. Enum. Pl. Zeyl. 92. 1864; Benth. & Hook. f. Gen. Pl. 1: 549. 1865; Bedd. Fl. Sylv. t. 177. 1872; Kurz, Prelim. Rep. For. Veg. Pegu App. A. 49. 1875; in J. Asiat. Soc. Beng. 45: 128. 1876; Ibid 276. 1877; For. Fl. Brit. Burma 1: 335. 1877; Baker in Fl. Brit. Ind. 2: 239. 1878; Prain in Proc. Asiat. Soc. Beng. 163. 1897; Watt Dict. Econom. Prod. 6(1): 322. 1892; Prain in J. Asiat. Soc. Beng. 62: 70. 1893; Trimen, Fl. Ceyl. 90. 1894; Gamble, list Tr. Shr. Clim. Darjeeling Dist. 30. 1896; Prain in J. Asiat. Soc. Beng. 66: 94 & 456. 1897; Woodr. in J. Bombay nat. Hist. Soc. 11: 426. 1897; Pierre, Fl. For. Cochinch. sub. t. 85. 1899; Cooke, Fl. Pres. Bomb. 1: 402. 1902; Wood in Rec. bot. Surv. India 2: 63. 1902; Prain, Beng. Plants 1: 407. 1903; Duthie, Fl. Upper Gang. Pl. 1: 267. 1903; Prain in Rec. bot. Surv. India 2: 300. 1903; Brandis, Indian trees, ed. 2: 243. 1907; Prain in Rec. bot. Surv. India 3: 200. 1908; Talbot, For. Fl. Bomb. Pres. Sind 1: 432. 1909; Merr. in Philipp. J. Sci. (Bot.) 5: 101. 1910; Haines, For. Fl. Chota Nagpur 333. 1910; Merr. Interpr. Rump. Herb. Amb. 271. 1917; Gamble, Fl. Madras 385. 1918; Ridley, Fl. Malay. Pen. 1: 593. 1922; Haines, Bot. Bihar Or. 299. 1922; Merr. Enum. Philipp. Fl. Pl. 2: 298. 1923; Parkinson, For. Fl. Andaman Isl. 152. 1923; Cowan A. M. & J. M. Trees N. Beng. 52. 1919; Kanjilal & Das, Fl. Assam 2: 109. 1938; Benthall, Trees of Calcutta 149. 1946; Merr. Pl. Life Pac. W. 32, t. 19. 1954; Santapau in Rec. bot. Surv. India 16 (1): 68. 1960.

Pongam f. *minari* Rheed. Hort. Mal. 6, t. 3. 1733.

Pongam Adans. Fam. 2: 322. 1763.

Galedupa Lamk. Encycl. 2: 594. 1786; Roxb. Hort. Beng. 53. 1814 et Fl. Ind. 3: 239. 1832; Taub. in Engl. & Prantl. Nat. Pfl. Fam. 3(2): 344. 1891.

Pungamia Lamk. Tabl. Encycl. t. 603. 1796-97.

Generic characters: Erect trees. Leaves imparipinnate; leaflets opposite, exstipellate. Flowers in lax, axillary racemes, arranged in fascicles of 2-4 on the rachis; bracts small, caducous, bracteoles minute. Calyx campanulate, truncate, teeth obsolete. Corolla exerted, standard suborbicular, wings obliquely oblong, keels obtuse. Stamens 10, monadelphous. Ovary sessile.

ovules 2, style incurved, stigma minute. *Pod* woody, obliquely oblong, not winged at sutures, flattened, indehiscent; *seed* 1, reniform.

Type species: *Pongamia glabra* Vent. Jard. Malm. t. 28. 1803.

Pongamia pinnata (Linn.) Pierre. Fl. For. Cochinch. sub. t. 385. 1899; Merr. Pl. Life Pac. W. 32, t. 19. 1954; Santapau in Rec. bot. Surv. India 16 (1): 68. 1960. (Plate 1).

Cytisus pinnatus Linn. Sp. Pl. ed. 1: 741. 1753. *Robinia mitis* Linn. Sp. Pl. ed. 2: 1044. 1763. *Galedupa indica* Lamk. Encycl. 2: 594. 1786 (excl. syn. *Gajugaledupa* Rump.; Roxb. Fl. Ind. 3: 239. 1832. *Dalbergia arborea* Willd. Sp. Pl. 901. 1800. *Pongamia glabra* Vent. Jard. Malm. t. 28. 1803; DC. Prodr. 2: 416. 1825; Wight & Arnott, Prodr. Fl. Pen. Ind. Or. 262. 1834; Wight, Ic. t. 59. 1838; Span. in Linnaea 15: 197. 1841; Voigt, Hort. Subur. Calcutt. 239. 1845; Benth. in J. Linn. Soc. 4 (Suppl.): 115. 1860; Dalz. & Gibs. Bombay Fl. 77. 1861; Bedd. Fl. Sylv. t. 177. 1872; Baker in Fl. Brit. Ind. 2: 239. 1878; Watt Dict. Econom. Prod. 6(1): 322. 1892; Trimen, Fl. Cey. 91. 1894; Prain in J. Asiat. Soc. Beng. 66: 94 & 456. 1897; Woodr. in J. Bombay nat. Hist. Soc. 11: 426. 1897; Cooke, Fl. Pres. Bomb. 1: 402. 1902; Wood in Rec. bot. Surv. India 2: 63. 1902; Prain, Beng. Plants 1: 407. 1903; Duthie, Fl. Upper Gang. Pl. 1: 267. 1903; Brandis, Indian trees, ed. 2: 243. 1903; Talbot, For. Fl. Bomb. Pres. Sind 1: 432. 1909; Haines, For. Fl. Chota Nagpur 333. 1910; Gamble, Fl. Madras 385. 1918; Haines, Bot. Bihar Or. 299. 1922; Parkinson, For. Fl. Andaman Isl. 152. 1923; Cowan A.M. & J. M. Trees of N. Beng. 52. 1929; Kanjilal & Das, Fl. Assam 2: 109. 1938; Benthall, Trees of Calcutta 149. 1946. *Galedupa arborea* Roxb. Hort. Beng. 53. 1814. *Galedupa maculata* Blanco, Fl. Filip. 559. 1837. *Pongamia grandifolia* Zoll. et Mor. in Syst. Verzeichn. 2-3. 1845-46. *Pongamia mitis* Kurz, Prelim. Rep. For. Veg. Pegu App. A. 49. 1875 et in J. Asiat. Soc. Beng. 45: 128. 1876. *Gaju pinnatum* O. Kuntze, Rev. Gen. Pl. 1: 167. 1891. *Galedupa pinnata* Taub. in Engl. & Prantl. Nat. Pfl. fam. 3(2): 344. 1891. *Pongamia mitis* Merr. in Philipp. J. Sc. 5: 101. 1910. *Pongamia pinnata* Merr. Interpr. Rump. Herb. Amboin. 271. 1917.

A moderate-sized tree, 10-20 m. high; branches spreading, glabrous; bark soft, greyish brown. *Leaf* imparipinnate, alternate, stipulate, 10.5-37 cm. long; leaflets 5-7, but mostly 5, rarely 3 (Bihar—Prain s.n., not mentioned by earlier workers), opposite, ovate, ovato-elliptic to elliptic, at times elliptic-oblong, rarely cordate (Andaman Islands; South India), 4.2-16.2 cm. long, 2.2-9.5 cm. wide, glabrous, subcoriaceous, entire, base mostly narrowed and cuneate, rarely rounded to deltoid, tip acute to shortly acuminate, exstipellate; lateral nerves 6-8 pairs, more prominent on the abaxial surface; rachis and petiolule glabrous, petiolule 5-10 mm. long. *Inflorescence* an axillary raceme, 7-18.8 cm. long, rarely upto 26 cm. long (Andaman Islands—Collector? accession No. 133031), very rarely branched (Andaman and Nicobar Island—Prain 68, King's collec-

tor s.n.); rachis glabrous to puberulous. *Flowers* 2-4, in fascicles, white tinged with pink or violet, variations in the colour of the corolla interesting as follows a. all petals pure white or almost creamy white b. all petals white with a touch of lilac on the wings c. standard and wings pale lilac or violet, the keel white d. the whole flower of a deep reddish purple [*Santapau* in Rec. bot. Surv. India 16(1): 69. 1960]; bracteate and bracteolate, bracteoles 2, small, ovate, brown hairy, situated one above the other on the pedicel just below the calyx-cup; pedicels of flowers 5-13 mm. long, slightly puberulous. *Calyx* cup campanulate, mostly 2-3 mm. long, rarely up to 4 mm. long, puberulous on the outside, teeth obsolete. *Corolla* exerted, standard ovate to ovato-orbicular, 9-12 mm. long, shortly clawed with 2 distinct folds below where the claw joins the body of the standard, clothed with fine, short, brown, deciduous hairs on its back, wings obliquely oblong, slightly adnate above the claws to the obtuse keel petals which are joined near the tip, keel and wings slightly hairy on their back. *Stamens* 10, monadelphous, tenth stamen free below and above and is united in the middle with the column; anthers oblong, versatile. *Ovary* brown hairy, subsessile; style incurved; stigma minute; ovules 2. *Pod* varies in size and shape (Plate 2), elliptic to oblong, obliquely oblong, 4-7.4 cm. long, 1.7-3.2 cm. wide, woody, flattened, indehiscent, narrow at base with a short, decurved mucro at apex, glabrous, 1-seeded; *seed* reddish brown, reniform, thick, hilum small.

Flower: February to May; *Fruit*: The whole year.

Distribution: Punjab, Sind, Rajasthan, Central Himalayas, Eastern Himalayas, Chittagong, Assam, Bengal, Bihar, Uttar Pradesh, Madhya Pradesh, Orissa, Bombay, Gujarat, Western India, South India, Andaman and Nicobars.

WALL. CAT: Peninsular India (Herb. Wight)—5878 (CAL); Penang, Malayan Peninsula, 1822—5878 F (CAL); Amherst near sea, 1827 and Atran, 1817, Burma—5878 H (CAL); No exact locality (Herb. Heyne)—5878 I (CAL).

PUNJAB: Without precise locality, Hoshiarpur district—Aitchison s.n. (CAL).

RAJASTHAN: Mount Abu, May 1916—Blatter 12142 (BLAT); Rajkot—Collector? s.n., accession number 132950 (CAL); Abu, May 1868—Collector? s.n., accession number 132953 (CAL).

CHITTAGONG: Kodla, Hills, Jul. 1885—Badul Khan 13 (CAL); Hills, Apr. 1887—Badul Khan 380, 381 (CAL); Harbang, Jaldi, 1915—Homfray 136 A, 22 (CAL); Hill tracts (Chittagong), 1876—Lister s.n. (CAL, B.S.I. Poona); Hill tracts—King's collector s.n. (CAL); Seetakoond, Feb. 1868—Clarke 6513 (CAL).

ASSAM: Darrang, Nalbary road side, Apr. 1902—Chatterjee s.n. (CAL, B.S.I. Poona); Singri, Jul. 1958—Panigrahi 14349 (CAL, B.S.I. Shillong); Charduar, Lokhra road, Feb. 1957—Panigrahi 5599 (CAL, B.S.I. Shillong); Gauhati, without precise locality, Apr. 1893—King's collector s.n. (CAL); Without any locality or collector—Accession number 132997 (CAL);

PLATE 1. *Pongamia pinnata* (Linn.) Pierre

Fig. 1. A branch with flowers; Fig. 2. A flower; Fig. 3. Standard petal; Fig. 4. Wing petal; Fig. 5. Keel petal; Fig. 6. Monadelphous stamens; Fig. 7. Pistil.

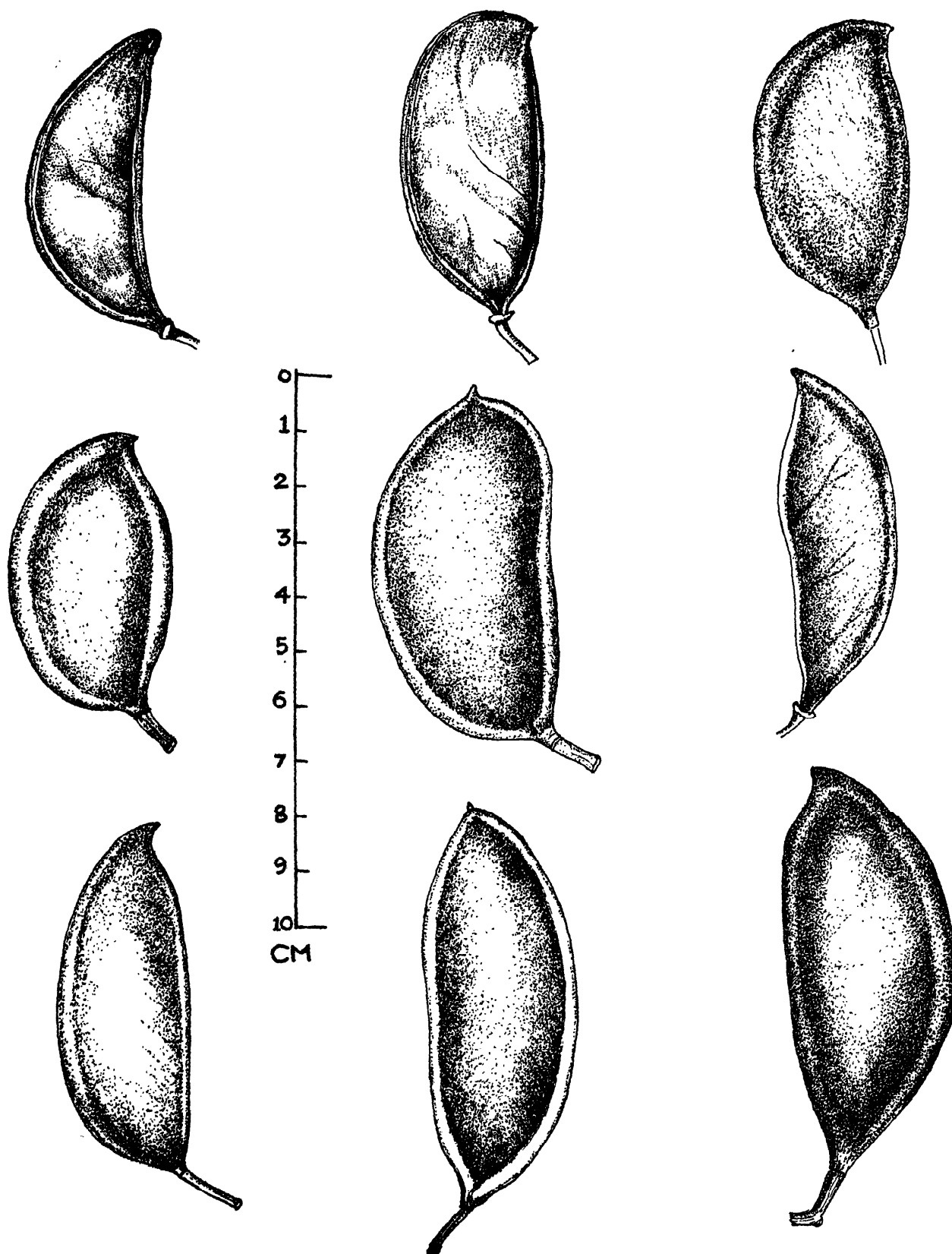


PLATE 2. *Pongamia pinnata* (Linn.) Pierre
Pods showing variation in size and shape.

Tangla (Assam), Apr. 1958—*Nath & Panigrahi 13400* (CAL, B.S.I. Shillong).

BENGAL: Sundarban, Kakdwip, Aug. 1902—*Prain s.n.* (CAL); Ambasia, Aug. 1902—*Prain s.n.* (CAL); without precise locality, 1898—*Mokim s.n.* (CAL); without precise locality, Apr. 1868—*Clarke 6801* (CAL); without precise locality, Jul. 1891—*Forest Ranger s.n.* (B.S.I. Poona); without any locality—*Kurz s.n.* (B.S.I. Poona); Cultivated in Botanic Garden, Calcutta, May 1880—*Collector? s.n.* (B.S.I. Poona).

BIHAR: Hazaribagh, Galah, Nov. 1911—*Prain s.n.* (CAL); Chotanagpur, 667 m., Apr. 1908—*Meebold 4292* (CAL); Sanchet, Chotanagpur, 500 m., 1886—*Campbell 19* (CAL); Manbhum, without precise locality—*Campbell s.n.* (CAL); Bariatu (S. Bihar) Nov. 1891—*Prain s.n.* (CAL).

UTTAR PRADESH: Saharanpur, Jun. 1896—*Collector? s.n.* (B.S.I. Poona).

MADHYA PRADESH: Hoshangabad, Boxi, R.F., 120 m., Mar. 1961—*Joseph 12434* (MH); Jerdon—*Vicary s.n.* (CAL); without any locality or collector—Accession number 132960 (CAL).

ORISSA: Chilka, Barkuda Island—*Annandale 1330* (CAL); Barkuda Island, Oct. 1919—*Annandale 1333* (CAL); Angul, Labangi, 500 m., Dec. 1902—*Lace s.n.* (CAL); Hirakud, without precise locality, 180 m., Oct. 1959—*Panigrahi 20503* (CAL, B.S.I. Shillong); Ganjam, Boragharo, Aug. 1931—*Narayanaswamy 5994* (MH); Ghatgaon (Orissa), Jun. 1957—*Panigrahi 8418* (CAL, B.S.I. Shillong); Nigirdah (Orissa), 920 m., Feb. 1958—*Panigrahi 20503* (CAL, B.S.I. Shillong).

BOMBAY: Bombay, Ganeshkhind Botanical garden, Apr. 1908—*Jhaveri s.n.* (B.S.I. Poona); Oct. 1905—*Patwardhan s.n.* (B.S.I. Poona); Victoria garden—*Collector? 11967* (BLAT); Mahalaximi, Sep. 1916—*Collector? 10831* (BLAT); Elephanta, Apr. 1899—*Collector? 10831* (BLAT); Opposite C.I.D. office, Jul. 1954—*Panthaki 1448* (BLAT); Elephanta Island, Dec. 1953—*Santapau 17546-47* (BLAT); Willingdon sports club, Feb. 1957—*Fernandez 3691* (BLAT); Lonawla, May 1903—*Gammie 16255* (B.S.I. Poona); without definite locality, Apr. 1924—*Acland 413* (BLAT); July 1960—*Divakar 707* (BLAT); 1954—*Collector? s.n.* (BLAT); Borivli, National Park, Sep. 1954—*Herbert 104, 267* (BLAT); Apr. 1955—*Herbert 693* (BLAT); Mar. 1956—*Herbert 1549* (BLAT); Aug. 1952—*Kaliani-wala 340* (BLAT); Salsette Islands, Mulgaum, Jan. 1943—*Santapau 1789* (BLAT); Andheri, Dec. 1916—*Collector? 10872* (BLAT); Goregaon, Aarey milk colony, Jan. 1958—*Tavakari 455* (BLAT); Apr. 1958—*Tavakari 1079* (BLAT); Jun. 1958—*Tavakari 1406* (BLAT); Malad, Quarry lillp, Aug. 1954—*Shah 183* (BLAT); Hills, Apr. 1958—*Shah 9779* (BLAT); without definite locality, Apr. 1959—*Shah 10299* (BLAT); Khandala, Convaless. home, Apr. 1943—*McCann 1836* (BLAT); Kune stream and Plat., Jun. 1944—*Santapau 4391-92* (BLAT); St. X. Ravine, Feb. 1946—*Santapau 8670* (BLAT); Convaless. home—Forbay, Apr. 1946—*Santapau 8711-12* (BLAT);

St. X. Villa, Feb. 1946—*Santapau 9138* (BLAT); without definite locality, Apr. 1941—*Santapau 102.15 H* (BLAT); Apr. 1942—*Santapau 102.120, 102.121* (BLAT); without definite locality, Aug. 1954—*Panthaki 1472* (BLAT); without definite locality, Nov. 1904—*Collector? 10209* (BLAT); Apr. 1907—*Collector? 10211* (BLAT); Bhorgat, Apr. 1956—*Jain 546* (B.S.I. Poona); Poona, Karli, Jul. 1892—*Collector? s.n.* (BLAT); College garden, Poona, Jun. 1902—*Garade 386* (B.S.I. Poona); Poona, Apr. 1891—*Collector? s.n.* (B.S.I. Poona); Vitthalwadi, Sep. 1956—*Mahajan 7250* (B.S.I. Poona); Ambegaon forest, Dec. 1957—*Deshmukh 30057* (B.S.I. Poona); without precise locality, 1899—*Tilak s.n.* (CAL); Colaba, Army territory, Oct. 1954—*Panthaki 1689* (BLAT); Uran, along the road to Mora, Jul. 1960—*Divakar 1025* (BLAT); Jhana, Mumbra, Mar. 1954—*Shenoy 2447-48* (BLAT); without definite locality, Apr. 1903—*Ryan 721* (B.S.I. Poona); Khandesh, Turanmal, Dec. 1918—*Collector? 12618* (BLAT); Igatpuri (Bombay), Nov. 1917—*Collector? 11738* (BLAT); Mountain path between Thakuriwadi and Wats, Jan. 1960—*Irani 4845* (BLAT); Kajrat, Jan. 1949—*Fernandez 359* (BLAT); Junagad, Datar hills, Apr. 1909—*Chibber s.n.* (B.S.I. Poona); Tithal-Bulsar, Apr. 1959—*Puri 50714* (B.S.I. Poona); Ambawra Jul. 1956—*Jain 5122* (B.S.I. Poona); Ambaude, Apr. 1957—*Vasavada 17069* (B.S.I. Poona); Matheran, Apr. 1957—*Puri 12899* (B.S.I. Poona); Ambevani, Apr. 1957—*Gangurde 18224* (B.S.I. Poona); Mulshi, Apr. 1956—*Jain 735* (B.S.I. Poona); Purandar, May 1956—*Jain 819* (B.S.I. Poona); Walhe, Sep. 1956—*Jain 6958* (B.S.I. Poona); Bhimashankar road, Jun. 1956—*Puri & party 2220* (B.S.I. Poona); Koyna river bed, Apr. 1956—*Puri 315* (B.S.I. Poona).

GUJERAT: Jamnagar, Dec. 1959—*Ansari 53870* (B.S.I. Poona); Way to Veraval, Aug. 1960—*Rao 63900* (B.S.I. Poona); Baroda, College campus, Baroda, Mar. 1955—*Shah 2005* (BLAT); Public park, Baroda, Mar. 1955—*Shah 2006* (B.S.I. Poona); Cutch, Nadi Bagh Rakhet Bhuj, Feb. 1958—*Puri 31429* (B.S.I. Poona).

WESTERN INDIA: Mysore, Talguppa, 700-1000 m., Oct. 1908—*Meebold 9680* (CAL); Tarekere, 700-1000 m., Oct. 1908—*Meebold 6787* (CAL); Chikballapur, Jan. 1958—*Jain & party 31090* (B.S.I. Poona); Shimoga, Apr. 1958—*Mahajan 34307* (B.S.I. Poona); Hunsur, Coorg, Mar. 1958—*Puri 33166* (B.S.I. Poona); Bisle forest, Jun. 1957—*Mahajan 19862 A* (B.S.I. Poona); Somnathpur, Mar. 1905—*Barber 6387* (MH); North Kanara, Jog falls, May 1956—*Puri 2071* (B.S.I. Poona); Dharwar, May 1905—*Collector? s.n.* (B.S.I. Poona); Kalegati road, Dharwar, Apr. 1956—*Irani 1811* (BLAT); Castle rock, south of station, Dec. 1953—*Santapau 17706* (BLAT); Duskee, Apr. 1882—*Talbot s.n.* (B.S.I. Poona); without definite locality, 1880—*Collector? s.n.* (B.S.I. Poona); Yekkambi, 660 m., Apr. 1956—*Puri 1041* (B.S.I. Poona); South Kanara, Someshwar, Apr. 1958—*Mahajan 34526* (B.S.I. Poona); Koncan, Sutagatti road, Belgaum,

Nov. 1957—*Mahajan 28644* (B.S.I. Poona); Khanapur, Belgaum—*Ahuja 47663* (B.S.I. Poona); Dapoli, May 1958—*Jain 34114* (B.S.I. Poona).

SOUTH INDIA: Srikakulam, Salur, 150 m., Sep. 1962—*Balakrishnan 963* (CAL); Vizakapatnam, Lakshmipuram, Jun. 1900—*Barber 1797* (MH); Godavari, Sirivaka, Dec. 1902—*Barber 5240* (MH); Gunjugudem, Rampa, 334 m., Oct. 1920—*Narayanaswamy 427* (CAL); Medak, Narasapur, 715 m., Apr. 1959—*Sebastine 8014* (MH); Kurnool, Peecheruvu, Feb. 1957—*Wagh 5062* (BLAT); Nellore, Veligonda, Jul. 1914—*Ramaswami 1335* (CAL); Chittoor, Panapakkam, May 1917—*Collector? s.n.*, accession number 17284 (MH); Madras, Adayar, Mar. 1889—*Gamble 20451* (MH); Adayar, Apr. 1889—*Talbot 20478* (B.S.I. Poona) Mambalam, Jun. 1962—*Thothathri 9856* (CAL); South Arcot, Gingee R. F., 120 m., Mar. 1961—*Sebastine 12362* (MH); Salem, Sivasamudram, Kollegal, Feb. 1930—*Narayanaswamy 20047* (MH); Shevaroy hills—*Perrottet 334, 335* (CAL); Coimbatore, Kuridimalai, 767 m., Feb. 1957—*Subramanyam 2431* (MH); Vellalur, 466 m., Mar. 1957—*Subramanyam 2519* (MH); Vellingiri, 667 m., Apr. 1957—*Sebastine 3116* (MH); Pollachi, Mar. 1882—*Brandis s.n.* (CAL); Oosimalai, 1108 m., Aug. 1929—*Narayanaswamy 18871* (CAL); Trichinopoly, near Uppiliyapuram, 200 m., Aug. 1958—*Sebastine 6217* (MH); without exact locality, Sep. 1878—*King s.n.* (CAL); Tanjore, Ramarpadam, Aug. 1960—*Sebastine 10645* (MH); Madurai, Sirumalai, 266 m., Feb. 1958—*Subramanyam 5361* (MH); Shembaganur—*Auglade 1841* (CAL); Ramnad, without exact locality, Oct. 1887—*Collector? s.n.*, accession number 17262 (MH); Nagercoil, Cape Camorin, Oct. 1958—*Wadhwa 42662* (B.S.I. Poona); Malabar, Wynaad, 1885—*Lawson s.n.* (MH); Travancore, Quilon, Mar. 1894—*Bourdillon 134* (CAL); Courtallam, 217 m., Mar. 1938—*Subramanyam 5666* (MH); Munthakoda, May 1958—*Puri 36377* (B.S.I. Poona); Igatpuri (S. India), 100 m., Apr. 1908—*Meebold 4754* (CAL); Maisor and Carnatic—*Thomson s.n.* (CAL); Pen. Ind. Or.—*Wight 811, 933* (CAL); Arigiam (S. India), 633 m., Mar. 1806—*Fischer 934* (CAL); without any locality (Madras Presidency)—*Ramaswami 656* (CAL); No locality (Herb. Krishnaswami Naidu)—*Collector? s.n.* (CAL).

ANDAMANS: South Andaman, Manglutan hill jungle, Jun. 1893—*King's collector s.n.* (CAL); Brindaban hill, Mar. 1895—*King's collector s.n.* (CAL); Namoonaghan hill jungle, Apr. 1895—*King's collector s.n.* (CAL); Iron barrack of Port Mouat hill jungle, Jul. 1894—*King's collector s.n.* (CAL); Dhani-kari hill jungle, Apr. 1893-94—*King's collector s.n.* (CAL); Dhani leaf creek, Oct. 1890—*King's collector s.n.* (CAL); Corbyn's cove south—*Kurz s.n.* (CAL); Watering grove—*Kurz s.n.* (CAL); Barren Island, Feb. 1884—*King's collector 122* (CAL); Little Andaman Island, Mar. 1891—*Prain s.n.* (CAL); Barren Island, Apr. 1891—*Prain s.n.* (CAL); Little Andaman Island, Jan. 1903—*Rogers s.n.* (CAL); without precise locality, Mar. 1898—*Heinig s.n.* (CAL); Middle And-

man, Baratang Island, Jan. 1904—*Prain's collector s.n.* (CAL); North Andaman, Great Cocos Island, 1890—*Prain s.n.* (CAL); Without any locality (Andamans), 1900—*Mann 66* (CAL); Oct. 1900—*Prain's collector 68* (CAL); Jun. 1900—*Prain's collector 13* (CAL); No locality or collector (Andamans)—Accession number 133031 (CAL).

NICOBARS: Car Nicobar, without precise locality—*Kurz s.n.* (CAL); Central Nicobars, Katchall Island, Feb. 1875—*Kurz s.n.* (CAL); Teressa Island, Feb. 1894—*King's collector s.n.* (CAL).

Nomenclatural notes: There are a few interesting points regarding the correct name which should be borne by this plant. Linnaeus first described this plant as *Cytisus pinnatus* (Sp. Pl. ed. 1: 741. 1753) and in his later edition (Sp. Pl. ed. 2: 1044. 1763) the same plant was described under a different name, namely *Robinia mitis*. Ventenat, while erecting the genus *Pongamia* (1803) described *P. glabra* as the type species, quoting only *Robinia mitis* Linn. under reference. Ventenat specific epithet '*glabra*' can no longer be applied to the plant as the plant was already known under the names *Cytisus pinnatus* Linn. and *Robinia mitis* Linn. respectively. Later Kurz (Prelim. Rep. For. Veg. Pegu App. A. 49. 1875) gave a new combination namely *P. mitis* (Linn.), based on *Robinia mitis* Linn. which name is again not valid as *Cytisus pinnatus* Linn. was much earlier to *Robinia mitis* Linn. Merrill made a similar combination (Philipp. J. Sci. 5: 101. 1910) namely *P. mitis* (Linn.) Merr., basing on *Robinia mitis* Linn. which automatically becomes invalid. It was Pierre, (Fl. For. Cochinch. sub. t. 385. 1899) who gave the correct name of this species namely *Pongamia pinnata* (Linn.) Pierre, quoting *Cytisus pinnatus* Linn. as the basionym. For a second time Merrill, without noticing Pierre's name (1899) made a similar combination (Interpr. Rump. Herb. Amboin. 271. 1917) namely *P. pinnata* (Linn.) Merr. which again is not a valid name. All the new combinations discussed above (Kurz 1875; Merrill 1910, 1917) have thus become synonyms as the correct name of the species is *Pongamia pinnata* (Linn.) Pierre.

Ecological notes: In its natural habitat, the plant grows along the banks of streams and rivers not far from sea, as well as on the banks of tidal creeks near the sea-coast. In the Andaman and Nicobar Islands, it grows as a littoral tree in the beach forests. It can also grow in dry places of the interior up to an elevation of 1000 metres (Gamble Fl. Madras 385. 1918). The plant has been reported (*Santapau* in Rec. bot. Surv. Ind. 16(1): 68-69, 1960) to grow to a height of 31 metres in dense forest in Khandala, away from all human habitations. It is therefore likely that the tree might be a native to Khandala district of Bombay (*Santapau* l.c.). The plant has become a favourite shade tree in many drier districts and is often planted on road sides as an avenue tree. The plant adopts itself well to the diverse conditions, growing well with its roots either in salt water or fresh water, or even exposed to the dry winds when planted along road sides (Haines Bot. Bihar Or. 300. 1922).

The short pods are woody in texture and contain a single seed. New pods seem to begin to set about the beginning of June and may remain green even after they reach their full size. They take nearly a year to ripen and do not fall till the hot weather of the year after their origin. It is unusual for the pods to be destroyed by insects. They do not split open and the seed cannot germinate untill the walls of the pod decay. Germination takes place easily at the beginning of the rainy season, when the pods may be brought down by the strong prevailing winds. Since the trees grow usually near water, the form of fruit is doubtless adapted to help the distribution of the seed by its ability to float long distances in streams.

Economic and medicinal uses : A. The wood is hard, white, turning yellow on exposure and not durable. It is, therefore, used for making solid cart wheels and also as fuel. A coarse fibre is extracted from the bark. The leaves make a good fodder for cattle and is used also as a green manure in fields. The oil from the seed,

popularly known as 'Karanj' oil is used for burning purposes. The seeds and roots are used as fish poison. B. The oil, extracted from the seeds is medicinal and is administered in scabies and such other skin affections. Leaves as well as oil from seeds are applied in the treatment of rheumatism. Fresh bark is taken internally in cases of bleeding piles. Poultice of leaves is applied to ulcers, infested with worms. The juice of roots is used for closing fistulous sores and for cleaning foul ulcers. It is also given internally with equal quantities of coconut milk and lime water in cases of gonorrhoea.

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